REMARKS

This application has been carefully considered in connection with the Examiner's Action. Claims 1-10 remain in the application. Reconsideration and allowance of the application is respectfully requested.

Rejection under 35 U.S.C. §102

Claim 1

As presented herein, the device of independent claim 1 makes it possible to track the movement of an instrument in the body volume with respect to a certain, specified reference phase of the spontaneous movement of the body volume. The device requires *only* the **movement model** stored in the data processing device, the locating device, and the sensor device (See the specification, page 3, lines 8-16). The **movement model** describes, with respect to a reference phase E_0 of the heartbeat, the movement field or the vectorial displacement $\underline{\Delta}$ to which the points of the vessel system are subject in the various phases E of the heartbeat. (See the specification, page 6, lines 1-3). Furthermore, with the aid of the **movement model**, it is possible to determine, for a current measured position $\underline{r}$ and orientation $\underline{o}$ of the instrument and the associated heartbeat phase E, the displacement vector $\underline{\Delta}$ or the transformation tensor **M**, respectively, that converts the measured position $\underline{r}$ into an estimated position ($\underline{r} + \underline{\Delta}$) of the instrument during the reference phase E_0 or converts the measured orientation into an estimated orientation $\mathbf{M}\cdot\underline{o}$ of the instrument during the reference phase, respectively. This "movement-compensated" position ($\underline{r} + \underline{\Delta}$) and orientation can then be displayed on a static vessel map that was obtained during the reference heartbeat phase E_0. The movement-compensated position and orientation of the instrument is situated in this connection on the vessel map, as a rule, within the vessel system so that confusing deviations between the instrument location shown and the layout of the vessels do not arise as a result of the heartbeat. (See the specification, page 6, lines 6-16).

Claims 1-10 were rejected under 35 U.S.C. §102(b) as being anticipated by **Verard** et al. (Pub. No.: US 2004/0097805; herein referred to as **Verard**). Applicant respectfully traverses this rejection for at least the following reasons.

The PTO provides in MPEP § 2131 that

> *"[t]o anticipate a claim, the reference must teach every element of the claim...."*

Therefore, with respect to independent claim 1, to sustain this rejection the **Verard** reference must contain all of the claimed elements of the claim. However, contrary to the examiner's position that all elements are disclosed in the **Verard** reference, the latter reference does not disclose "a *movement model* that describes the spontaneous movement of the body volume as a function of the movement parameter (E), wherein *with* (i) *the aid of* the *movement model*, (ii) a *current* measured *location* (r) *and* (iii) an associated *current movement parameter*, the data processing device calculates an estimated movement-compensated location ($r + \Delta$), corresponding to the current measured location (r) plus a vectorial displacement (Δ), of the instrument that the instrument would have in a reference phase (E_0) of the spontaneous movement" as recited in claim 1. Thus, the rejection is not supported by the **Verard** reference and should be withdrawn.

In contrast, **Verard** discloses a *3-D heart model* (see Verard, paragraph [0095]) in which an icon representing a catheter is superimposed on the background of the 3-D heart model. "[E]lectrode and/or pressure sensor information … is used to correctly locate the catheter position within this *heart model*. In this regard, very *specific locations* can be searched out to *provide reference points within* the heart *to fit the model space*. The transition between regions of the heart are easily identified through changes in the morphology of the electrode and pressure signals. The *transition regions* are very sharp, making these regions excellent *reference points* or landmarks for the *heart*

model. The possible *reference points* include the superior vena cava (SVC) to right atria transition, the tricuspid valve, and the left ventricular apex. As these *reference points* are *located*, the *heart model* is *shrunk* or *stretched* and *rotated to match* these *reference points*. Normally, the navigation system 10 will automatically locate the *reference points* by monitoring the electrode and pressure sensors. This results in a visualization of the catheter 52 as it is moved through the *heart model*. Once the *3-D heart model* placement is established, a mapping function can begin or a lead implant site chosen. The *3-D heart model* will be scaled and rotated only within physiological bounds. *Reference points* outside of these bounds will generate an alert and require the physician to resolve the discrepancy" (emphasis added). Thus, the *3-D heart model* of **Verard** does not teach "a *movement model* that describes spontaneous movement of the body volume as a function of the movement parameter (E), wherein *with* **(i)** *the aid of* the *movement model*, **(ii)** a *current* measured *location* (r) *and* **(iii)** an associated *current movement parameter*, the data processing device calculates an estimated movement-compensated location ($r + \Delta$) … of the instrument that the instrument would have in a reference phase (E_0) of the spontaneous movement" as recited in claim 1.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 2-9 depend from and further limit independent claim 1 and therefore are allowable as well. Accordingly, the 35 U.S.C. § 102(b) rejection thereof has now been overcome.

With respect to Claim 10, the same contains limitations similar to those with respect to claim 1. Accordingly, claim 10 is believed allowable for at least the same reasons as those presented herein above with respect to overcoming the rejection of claim 1. Withdrawal of the rejection is respectfully requested.

Conclusion

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 10 are in condition for allowance. Claims 2-9 depend from and further limit independent claim 1, and therefore are allowable as well.

An early formal notice of allowance of claims 1-10 is requested.

Respectfully submitted,

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